L 13769-65
ACCESSION NR: AP4047348

method in the -90—120C range. Plots of ε versus temperature follow a characteristic ferroelectric pattern in all crystals with additives. The effect of various impurity concentrations on the Curie point was shown to be independent of the crystal growth conditions for NiO, Nb_2O_5, and Ta_2O_5 additives. However, the Curie point was greatly affected by the cooling rate of crystals with $2NiO \cdot Ta_2O_5$ or $2NiO \cdot Nb_2O_5$ additives. The Curie point of the fast-grown crystals was much lower than that of slow-grown crystals with the same impurity content. Crystals grown with longer retention at the highest temperature (1160C) followed by fast cooling had a Curie point which increased with retention time, reaching the value obtained for the slow-cooled crystals. Heat treatment of the fast-grown crystals at 1200C for several hours produced the same effect. The properties of the slow-grown crystals were not changed by heat treatment. X-ray powder-diffraction analysis in the VRS-3 chamber indicated a change in crystal structure with heat treatment. The effects of crystal-growth conditions and of heat treatment on the properties of crystals with complex additives are believed to be connected with the varied distribution of impurity ions in the lattice of the slow- or fast-grown crystals and their rearrangement in the

Card 2/3

L 13769-65
ACCESSION NR: AP4047348

process of heat treatment. A very significant temperature hysteresis of the dielectric constant in fast-grown crystals illustrates an unstable property which is correlated with an unstable domain structure. Orig. art. has: 7 figures and 2 tables.

ASSOCIATION: Dnepropetrovskiy gosuniversitet. (Dnepropetrovsk State University)

SUBMITTED: 29Dec62 ENCL: 00 SUB CODE: SS, IC

NO REF SOV: 003 OTHER: 002 ATD PRESS: 3132

Card 3/3

ACCESSION NR: AP4011742 S/0181/64/006/001/0092/0095

AUTHORS: Kudzin, A. Yu.; Guskina, L. G.; Petrushkevich, I. S.

TITLE: Stabilization of domain structure in single crystals of barium titanate

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 92-95

TOPIC TAGS: domain structure barium titanate, barium titanate single crystal, domain structure stabilization, sublattice, sublattice vacancy, dielectric, dielectric hysteresis, hysteresis loop, nickel oxide, tantalum oxide

ABSTRACT: The dielectric hysteresis loops of single crystals of barium titanate containing tantalum oxide and nickel oxide are anomalous. All samples tested contained about 0.3 molecular % tantalum oxide and from 0 to 0.5 molecular % nickel oxide. Increase in nickel content led to a decrease in Curie point. Optimal conditions for growing the barium titanate were obtained with nickel oxide concentrations of 0.3-0.4 molecular %. The anomalous loops were found to be stable relative to external effects, this relation resulting from stabilization of domain structure. The rate of forming the domain structure during application and removal of the electrical field was rather large, since twin hysteresis loops were noted

Card 1/2

ACCESSION NR: AP4011742

at frequencies up to 10 kilocycles. It is concluded that vacancies in the barium sublattice, resulting from introduction of pentavalent ions, may serve as centers for fixing the domain walls. Orig. art. has: 5 figures.

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University)

SUBMITTED: 08Jul63	DATE ACQ: 14Feb64	ENCL: 00
SUB CODE: PH	NO REF SOV: 004	OTHER: 001

Card 2/2

ACCESSION NR: AP4025000 S/0070/64/009/002/0295/0297

AUTHOR: Kudzin, A. Yu.

TITLE: Effect of admixtures on the properties of barium titanate

SOURCE: Kristallografiya, v. 9, no. 2, 1964, 295-297

TOPIC TAGS: barium titanate, single crystal, ferroelectric property, metal oxide admixture, Curie point, lattice parameter

ABSTRACT: Unit cell parameters of barium titanate single crystals were measured at temperatures up to 300C. Samples were prepared both without admixtures and with CoO, NiO, Nb_2O_5, $2NiO \cdot Nb_2O_5$, or $2NiO \cdot Ta_2O_5$. The measurements were made to show the effect of nonisomorphous admixtures on the shift of the Curie point and thus to correlate the ferroelectric properties of barium titanate-base solid solutions with their geometry. The parameters were measured with the RKE chamber and a tube with a copper anticathode. Sample temperatures were determined with an accuracy of $\pm 2C$ from the unit cell parameter of the aluminum powder added to the $BaTiO_3$ powder before compacting. A linear increase of the parameter with increasing oxide admixture content was established

Card 1/2

ACCESSION NR: AP4025000

for all crystals studied. The parameter at the Curie point is a constant, independent of the nature or concentration of admixtures. The increase in volume of the unit cell is attributed 1) to the greater radius of Co and Ni ions compared to that of the titanate ions or 2) to the formation of vacancies in the Ba sublattice in the presence of tantalum and niobium oxides. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: Dnepropetrovskiy gosudarstvenny*y universitet (Dnepropetrovsk State University)

SUBMITTED: 09Dec63 DATE ACQ: 15Apr64 ENCL: 00

SUB CODE: MM, PH NO REF SOV: 007 OTHER: 000

Card 2/2

ACCESSION NR: AP4030653 S/0048/64/028/004/0731/0734

AUTHOR: Sinyakov, Ye.V.; Kudzin, A.Yu.

TITLE: Electric conductivity anomaly in barium titanate single crystals annealed at high temperatures /Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May to 5 June 1963/

SOURCE: AN SSSR. Izv. Ser.fiz., v.28, no.4, 1964, 731-734

TOPIC TAGS: barium titanate, electric conductivity, barium titanate electric conductivity, barium titanate reduction, barium titanate oxygen defect , F center migration

ABSTRACT: The electric conductivity of barium titanate single crystals was measured at temperatures from 20 to 250°C, and the effect of high temperature anneal in air and oxygen was investigated. The crystals were prepared from purified materials, and only crystals with no visible defects were employed. The conductivity was measured with an electronic electrometer having a sensitivity of 7×10^{-15} A/mm. Guard electrodes were employed to avoid surface effects. Conductivity measurements on unannealed crystals agreed well with other earlier measurements and showed an activation energy of 2.56 eV at temperatures above 160°C. Crystals were annealed for 5 to 7 hrs.

Card 1/3

ACCESSION NR: AP4030653

at 900°C in air and in oxygen. The anneal had the same effect whether it was conducted in air or in oxygen. The conductivity increased several orders in magnitude, and the activation energy dropped to 1.5 or 1.6 eV and became independent of temperature and applied voltage. The current in the annealed crystals was a nonlinear function of the applied voltage; it sometimes increased as rapidly as the seventh power of the voltage. When the voltage was applied, the current would gradually rise to its final value. The time required for the current to reach its equilibrium value varied from about 10 minutes to over an hour. The rise was more rapid at higher temperatures and voltages. After the applied field was removed, the crystal would gradually resume its initial state of low conductivity. In view of work of V.M.Gurevich and I.S.Rez (Fizika tverdogo tela,2,673,1960), it is concluded from the activation energy that the enhanced conductivity was due to oxygen defects. These would be formed in the surface layer during the anneal and would migrate to the interior of the crystal under the influence of the field. The conclusion that barium titanate can lose oxygen at high temperature even in an oxygen atmosphere is in accord with findings of H.Arend and P.Coufova (Chekhosl.fiz.zh.,No.11,416,1961). The recovery of the state of low conductivity after the field was removed is less easily understood. It is suggested that complex defects were formed, involving F centers and trivalent

Card 2/3

ACCESSION NR: AP4030653

titanium ions. The F centers would migrate to the interior of the crystal under the influence of the field; when the field was removed, the F centers would diffuse to the surface and locate near trivalent titanium ions. Orig.art.has: 2 formulas and 6 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: EM NR REF SOV: 002 OTHER: 004

Card 3/3

L 8648-66 EWT(l)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/GG

ACC NR: AP5022735 SOURCE CODE: UR/0181/65/007/009/2845/2846

AUTHOR: Guyenok, Ye. P.; Kudzin, A. Yu.

ORG: Dnepropetrovsk State University im. 300th Anniversary of the Reunion of the Ukraine and Russia (Dnepropetrovsk gosudarstvennyy universitet)

TITLE: Effect of vapor from liquid polar compounds on the dielectric properties of barium titanate single crystals with various admixtures

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2845-2846

TOPIC TAGS: single crystal, barium titanate, dielectric property, dielectric constant

ABSTRACT: Some data are given from an investigation of the effect which atmosphere has on the dielectric properties of $BaTiO_3$, both as a pure single crystal and with small additions (<1 mol %) of cobalt, nickel, manganese, tantalum and niobium oxides. The effect of ambient moisture content on the dielectric constant of the specimens was studied. Crystals of pure barium titanate and those with impurities of cobalt, nickel and manganese oxides showed almost no change in the dielectric constant when the relative humidity was changed from 70 to 100%. The properties of crystals with small additions (~0.3%) of Ta_2O_5 or Nb_2O_5 are strongly dependent on ambient humidity. For most crystals with these impurities, an increase in humidity from 70 to 100% caused an increase of 30-60 μμf, which is 25-50% of the original capacitance of the

Card 1/2

L 8848-66

ACC NR: AP5022735

specimen. For some specimens the change was greater than 100%. The capacitance of these specimens was a function not only of water vapor in the air, but of vapor from other liquids as well. It is assumed that the experimentally observed phenomena are due to the effect of adsorbed polar molecules on the surface layer. Orig. art. has: 2 figures, 1 table.

SUB CODE: 20/ SUBM DATE: 05Mar65/ ORIG REF: 001/ OTH REF: 005

BVK

Card 2/2

L 7823-66 EWT(1)/EWP(e)/EPA(s)-2/EWT(m)/EWP(i)/EPA(w)-2/EWP(b)/EWP(t) IJP(c)
ACC NR: AP5028110 JD/GG/WH SOURCE CODE: UR/0048/65/029/011/2017/2019

AUTHOR: Guyonok, Ye.P.; Kudzin, A.Yu.; Levkina, A.P.

ORG: Dnepropetrovsk State University (Dnepropetrovskiy gosudarstvennyy universitet)

TITLE: Peculiarieties of polarization of barium titanate single crystals having double hysteresis loops /Report, Fourth All-Union Conference on Ferro-electricity held at Rostov-on-the Don 12-16 Sepgember 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 11, 1965, 2017-2019

TOPIC TAGS: ferroelectric crystal, single crystal, dielectric constant, electric domain structure, electric field, barium titanate, electric polarization, hysteresis loop

ABSTRACT: Polarization and domain structure have been investigated in $BaTiO_3$ single crystals doped with 0.35 mole % of Ta_2O_5 and grown from solution in a KF melt. Such crystals are known to exhibit double hysteresis loops. At room temperature the investigated crystals had a characteristic fine domain structure consisting only of a-domains. Regions of c-domains appeared when the temperature was raised above about 70°C. When the specimens were cooled from a temperature somewhat above the Curie point, the c-domains persisted to a temperature lower than that at which they appeared on heating, and the characteristic fine a-domain structure was recovered only after the crystals had been held at room temperature for several hours. The dielectric con-

Card 1/2

L 7823-66

ACC NR: AP5028110

stant exhibited a thermal hysteresis (not described in detail), which appears to be associated with this behavior of the domain structure. The dielectric constant was measured with a 60 V/cm 1 Mc field in the presence of dc bias fields up to 12 kV/cm. The dielectric constant remained nearly constant as the bias was increased until a bias of 4-5 kV/cm was reached; when the bias was further increased the dielectric constant decreased rapidly, and at a bias of 12 kV/cm the dielectric constant was close to that of a crystal containing only c-domains. When the bias was decreased the dielectric constant increased less rapidly than it had decreased with increasing bias. In all these measurements the dielectric constant reached a steady value only some time (typically 5-10 minutes) after the corresponding bias was applied. Application of a dc bias had a corresponding influence on the domain structure: c-domain regions began to appear at a bias of 4-5 kV/cm and when the bias reached 12 kV/cm there remained only a few a-domains. When the bias was reduced the c-domains disappeared. The crystals were subjected to 10-30 μsec square voltage pulses and the charging current was observed on an oscilloscope. When the pulse amplitude was low the sample behaved like an ordinary linear capacitor, but at pulse amplitudes above 10 kV/cm there were observed ferroelectric polarization currents. Possible reasons for the observed behavior are discussed briefly. It is suggested that the impurity ions and the vacancies in the barium sublattice are not distributed randomly throughout the volume of the crystal, but are so ordered as to favor the appearance of a stable a-domain structure. Orig. art. has: 1 formula and 4 figures.

SUB CODE: SS, EM SUBM DATE: 00/ ORIG REF: 004 OTH REF: 003

Card 2/2

L 41602-66 EWT(m)/T/EWP(e)/EWP(t)/ETI IJP(c) WH/DS/JD/JG

ACC NR: AP6018529 SOURCE CODE: UR/0181/66/008/006/1702/1707

AUTHOR: Guyenok, Ye. P.; Kudzin, A. Yu. 77 B

ORG: Dnepropetrovsk State University (Dnepropetrovskiy gosudarstvennyy universitet)

TITLE: Dependence of polarization of single crystal $BaTiO_3$-Ta_2O_5 on the humidity of the surrounding atmosphere

SOURCE: Fizika tverdogo tela, v. 8, no. 6, 1966, 1702-1707

TOPIC TAGS: dielectric polarization, ferroelectric property, barium titanate, tantalum containing alloy, electric hysteresis, atmospheric humidity, surface property

ABSTRACT: This is a continuation of earlier work (FTT v. 7, 2845, 1965 and preceding papers) on the ferroelectric properties of single crystals of barium titanate to which tantalum oxide is added. The tests were made on $BaTiO_3$ with 0.3 mol.% Ta_2O_5, grown from the solution in a potassium fluoride melt. Silver electrodes were deposited by cathode sputtering. The dielectric constant and the dielectric loss angle were measured at 1 Mc by variation of the reactance, and at audio frequencies by a bridge method. The dielectric hysteresis loops were investigated at 50 cps by the Sawyer-Tower procedure. The electric conductivity was measured with an ohm meter. The relative humidity of the surrounding atmosphere was produced with the aid of saturated salt solutions. The results showed a strong increase in the dielectric constant and in the dielectric losses with increasing humidity, when measured in a weak field, and an increase in the crystal polarization in strong fields. The dielectric constant

Card 1/2

L 41602-66

ACC NR: AP6018529 O

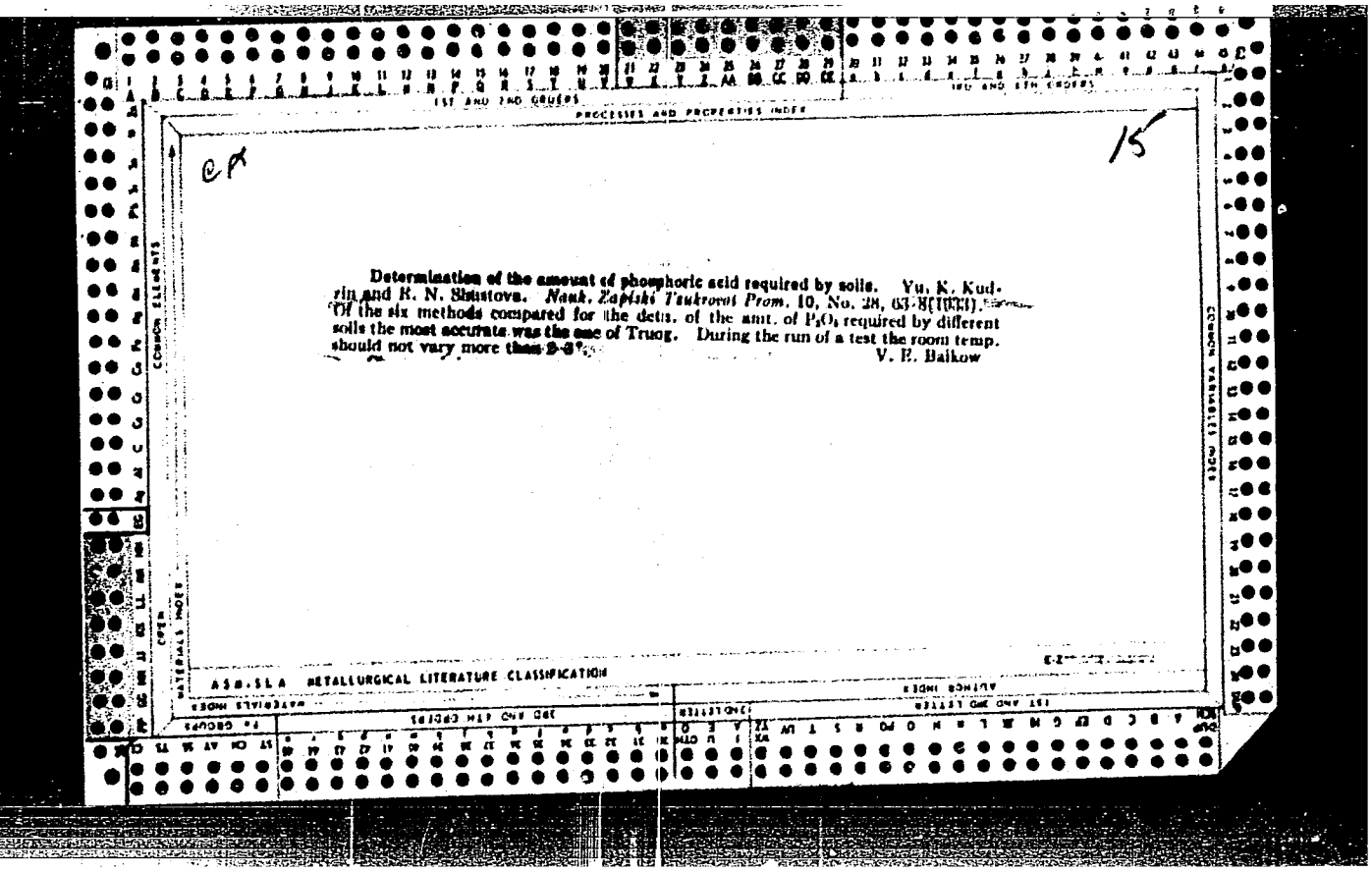
decreased more rapidly with increasing frequency at increased humidity than in a dry atmosphere. Although the results are strongly influenced by the surface finish of the crystals, they cannot all be interpreted as being due to an increase in the effective electrode area by absorption of moisture on the free surface. It is concluded that the effects are due to the joint action of the moisture and the surface properties of the crystals, particularly the nature of the ferroelectric domains and their wedges on the surface. A model capable of explaining qualitatively the results is briefly described. Orig. art. has: 4 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 21Oct65/ ORIG REF: 005/ OTH REF: 006

Card 2/2

KUDZIN, Yu.; YAROSHEVICH, I. [IAroshevych, I.]

Use of silicate bacteria in the steppe zone of the Ukraine.
Mikrobiol.zhur. 26 no.4:90-91 '64. (MIRA 18:10)



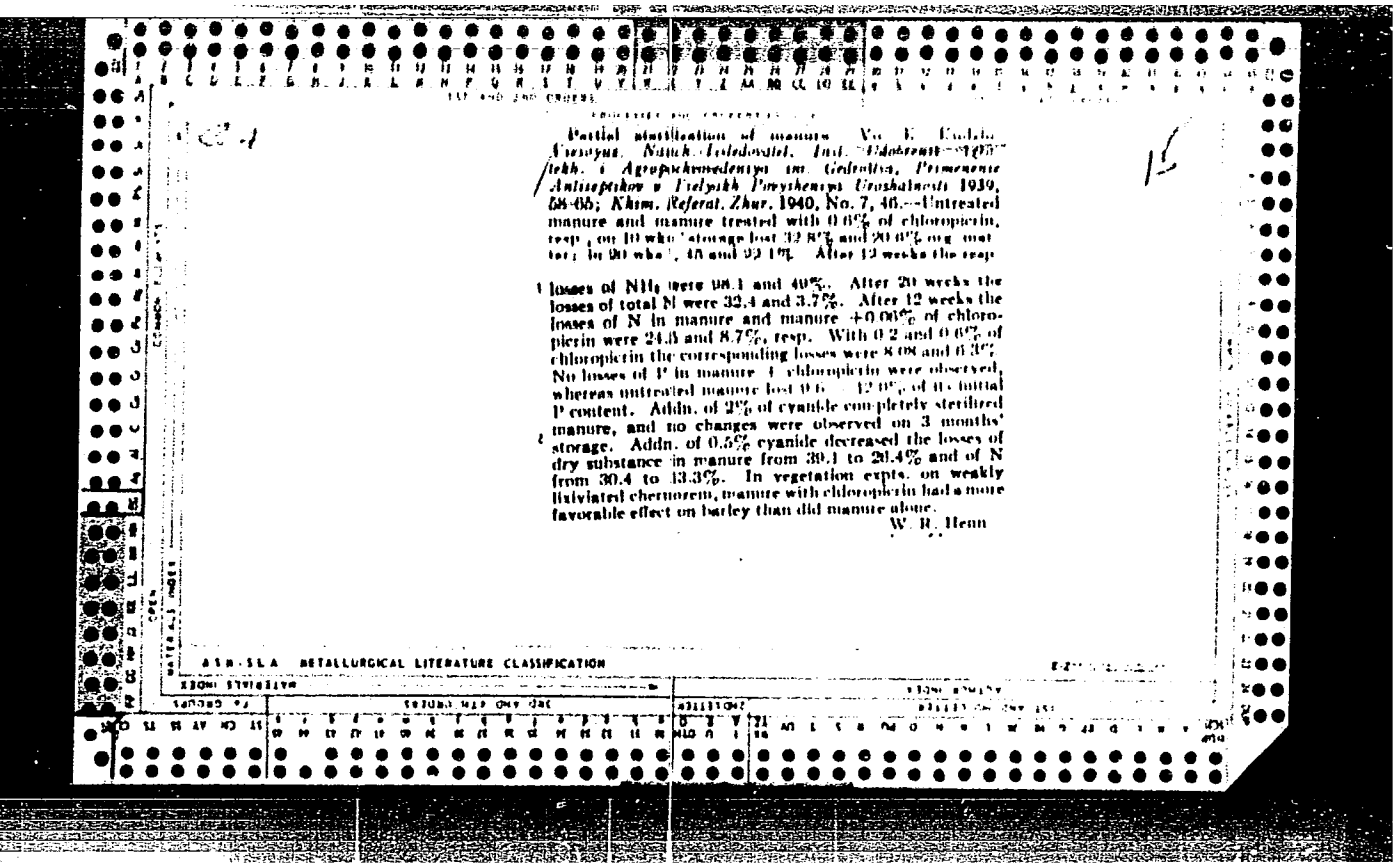
CP

15

Determination of the amount of phosphoric acid required by soils. Yu. K. Kudrin and R. N. Shustova. *Nauk. Zapiski Tsukrovoi Prom.* 10, No. 28, 63-8(1933). Of the six methods compared for the detn. of the amt. of P_2O_5 required by different soils the most accurate was the one of Truog. During the run of a test the room temp. should not vary more than 2-3°.

V. P. Balkow

A S B - S L A METALLURGICAL LITERATURE CLASSIFICATION



Partial sterilization of manure. Yu. I. Kudin, *Trudy Vses. Nauch.-Issledovatel. Inst. Udobrenii i Agrotekh. i Agropochvovedeniya im. Gedroitsa, Primenenie Antiseptikov v Pochvakh Pryshentsa Urozhainosti* 1939, 58-65; *Khim. Referat. Zhur.* 1940, No. 7, 46.—Untreated manure and manure treated with 0.6% of chloropicrin, resp., on 10 wks. storage lost 32.8% and 20.6% org. matter; in 90 wks., 48 and 32.1%. After 12 weeks the resp. losses of NH_3 were 98.1 and 40%. After 20 weeks the losses of total N were 32.4 and 3.7%. After 12 weeks the losses of N in manure and manure +0.6% of chloropicrin were 24.5 and 8.7%, resp. With 0.2 and 0.6% of chloropicrin the corresponding losses were 8.08 and 6.3%. No losses of P in manure + chloropicrin were observed, whereas untreated manure lost 9.6–12.0% of its initial P content. Addn. of 2% of cyanide completely sterilized manure, and no changes were observed on 3 months' storage. Addn. of 0.5% cyanide decreased the losses of dry substance in manure from 39.1 to 20.4% and of N from 30.4 to 13.3%. In vegetation expts. on weakly leached chernozem, manure with chloropicrin had a more favorable effect on barley than did manure alone.

W. R. Henn

CA

1b

Partial sterilization of manure in prevention of losses of nitrogen and phosphorus during storage. Yu. K. Kudzin.
*Vsesoyuz. Nauch.-Issledovatel. Inst. Udobrenii Agrotekh.
i Agropochvovedeniya im. Gedroitsa, Primenenie Anti-
septikov v Tselykh Povysheniya Urozhainosti* 1939, 113-
25; *Khim. Referat. Zhur.* 1940, No. 7, 47.—On weakly
lixiviated chernozem soils, chloropicrin produced high in-
creases in the yields of sugar beet roots, barley and seeds
of sugar beets. The moisture content of the soil had little
effect on the action of large doses of chloropicrin. Low
moisture contents of the soil did not insure optimum condi-
tions for the action of small doses of chloropicrin. Chloro-
picrin decreased the contents of nitrates in the soil and in-
creased the contents of water-sol. and absorbed NH_3,
water-sol. P_2O_5 and P_2O_5 sol. in Truog's reagent.
W. R. Henn

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

KUDZIN, YU. K.

42430.Nevoi Zerno-Sveklovichnom sevooborote: byulleten sumskoy s-Kh opyt. Stantsii, vyp. 4, 1947, S. 26. Bibliogr: 32 Nazv.

KUDZIN YU. K. i SHUSTOVA, N.

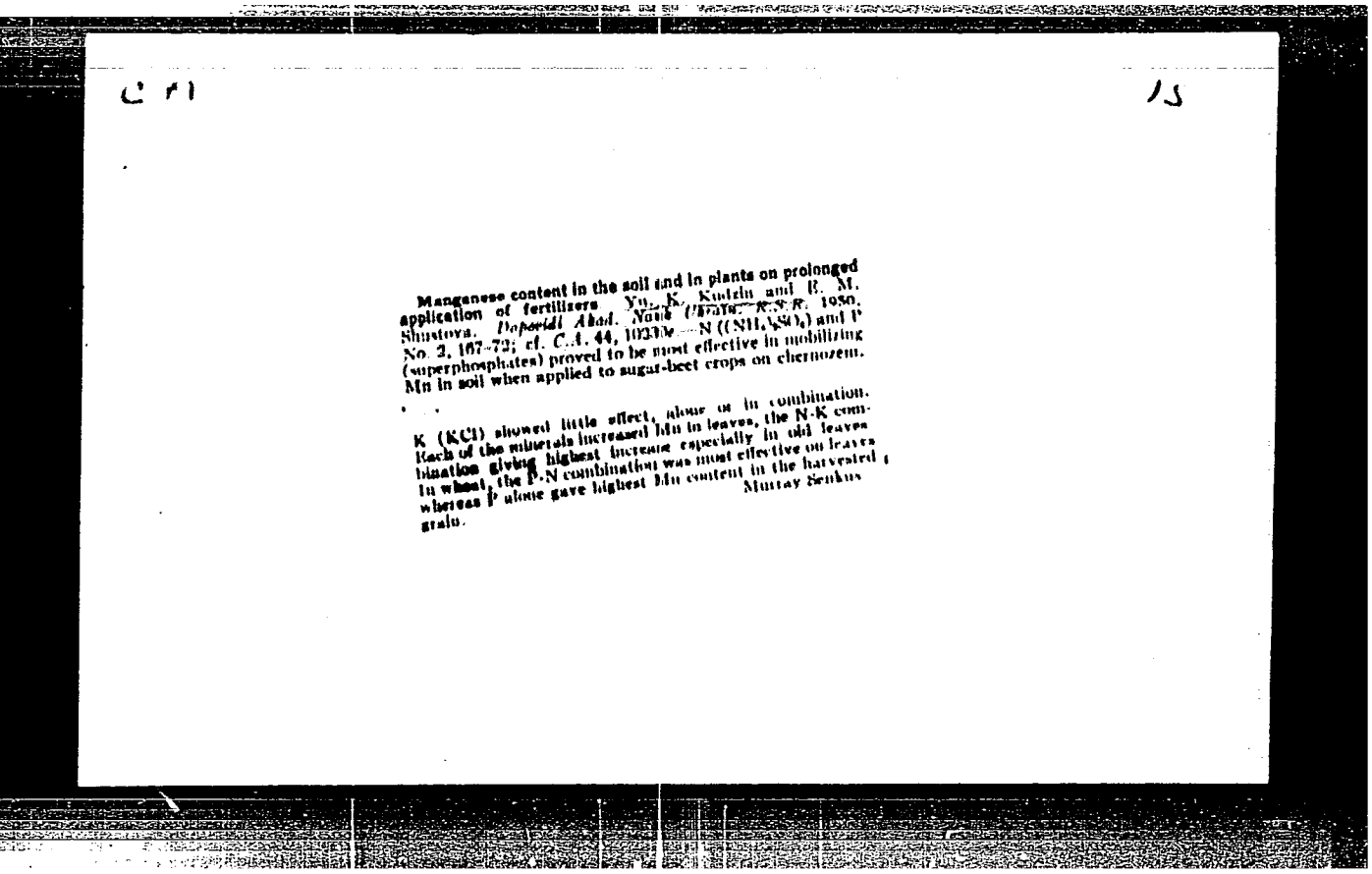
42431. Tekhnika vneseniya Kaliynykh udobreniy. Byulleten' Sumskoy, S-Kh. opyt. Stantsii vyp. 4, 1947, S. 55-67.

KUDZIN, YU. K. I. SHUSTOVA, E.N.

42456. Tekhnika Vneseniya UdobreniyPod Zernovyye Kul'tury. Byulleten' Sumskoy S-Kh Opyt. Stantsii, Vyp. 4, 1947, S. 68-79

KUDZIN, YU. K.

42455. Ryadkovoye Udoreniye Zernovykh Kul'tur. Byulleten' Sumskoy S.-Kh Opyt Stantsii, Vyp. 4, 1947, S. 80-88



C 21

15

Manganese content in the soil and in plants on prolonged application of fertilizers. Yu. K. Kudzin and R. M. Shustova. *Doposidi Akad. Nauk [illegible] S.S.R.* 1950, No. 2, 167–72; cf. *C.A.* 44, 10230e.—N ($(NH_4)_2SO_4$) and P (superphosphates) proved to be most effective in mobilizing Mn in soil when applied to sugar-beet crops on chernozem.

K (KCl) showed little effect, alone or in combination. Each of the minerals increased Mn in leaves, the N-K combination giving highest increase especially in old leaves. In wheat, the P-N combination was most effective on leaves whereas P alone gave highest Mn content in the harvested grain.

Murray Senkus

1. KUDZIN, YU., KARA, YU. M.

2. USSR (600)

4. Wheat

7. Significance of microelements in the period of initial growth and the development of wheat. Sov. agron. 10 No. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February, 1953. Unclassified.

1. KUDZIN, YU.

2. USSR (600)

4. Machine-Tractor Stations

7. Agrochemical laboratory of the machine-tractor station, MTS, 13, no. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KUDZIN, Yu. K.

USSR

The effectiveness of phosphobacterin on chernozem and chestnut-brown soils of the steppe zone in the Ukraine. Yu. K. Kudzin and I. V. Yaroshevich. *Zemledelie* 3, No. 4, 53-6 (1955). Tests of phosphobacterin increase the P intake of crops. J. S. Joffe

KUDZIN, Yu.K., kandidat sel'skokhozyaystvennykh nauk.

Unsolved problems in applying bacterial fertilizers.
Zemledelie 4 no.12:82-84 D '56. (MLRA 10:2)

(Fertilizers and manures)

USSR/Cultivated Plants - Grains.

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39187

Author : Kudzin, Yu.K.
Inst :
Title : Applying Fertilizer Simultaneously with Winter Wheat Sowing.

Orig Pub : Kolgospnik Ukrainy. 1956, No 7, 17-18.

Abstract : A high economic efficiency of introducing small doses of mineral fertilizer with the addition of trace elements B and Mn, and also of using bacterial fertilizer simultaneously with sowing is shown on the basis of experimental data. Supplied by the Scientific Research Institutions and kolkhoz' of the Ukrainian SSR. An addition of 5% borax or 3% boric acid to granulated Pc (which was introduced in quantities of 50 kg/ha) guaranteed a wheat crop increase of 1.4% on the average. The introduction of 2% of manganese oxide caused an increase of 1 cwt/ha.

Card 1/2

KUDZIN, Yu. K.

USSR/Soil Cultivation. Organic Fertilizers. J-4

Abs Jour: Ref Zhur-Biologiya, No 1, 1958, 1283.

Author : Kudzin, Yu. K.
Inst :
Title : Unresolved Question of the Application of Bacterial Fertilizers.

Orig Pub: Zemledeliye, 1956, No 12, 82-84.

Abstract: The results of experiments with bean-legume crops and perennial leguminous grasses in 1949-1954 in the steppe zone of the Ukraine are given; the object of the experiments was to prove the advantages of bacterial fertilizers prepared from local strains over those prepared from standard strains. The experiments made clear that local nitragin is superior to the factory variety. Thus vetchling gave yields of 12.7 centners/hectare with factory produced nitragin and 13.8 centners/hectare with

Card : 1/2

M

COUNTRY :
CATEGORY :

ABS. JOUR. : RZBiol., No. 21,1958, No. 95925

AUTHOR :Kudzin,Yu.K.; Mel'nichenko,V.F.
INST. :All-Union Sci.Res. Inst. of Corn
TITLE :The Effect of Pre-Planting Irrigation on the Protein Content of Wheat Grain in Southern Ukrainian SSR

ORIG. PUB. :Byul.Vses.n.-i.in-ta kukuruzy, 1957, No.1, 33-37

ABSTRACT : An analysis is made of the spring wheat grain from the irrigated plots in southern UkrSSR. The quality of the grain under conditions of irrigation is reduced through higher percentages of mealy grain in the harvest. By combining the pre-planting or waterlogging irrigation with fertilizer placement, it is possible to avoid the reduction of protein content in the grain. An especially promising method of increasing both the size and quality of the

CARD: 1/2

KUDZIN, Yu.K., kand. sel'skokhozyaystvennykh nauk; MEL'NICHENKO, V.F.

Effect of various types of fertilizer on the protein content of wheat in the steppe region of the Ukraine. Dokl. Akad. sel'khoz. 23 no.7:31-34 '58. (MIRA 12:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukurusy. Predstavlena akademikom B.P. Sokolovym.
(Ukraine--Wheat) (Proteins)

AUTHORS: Kudzin, Yu. K., Makednska, L. A. 20-119-3-60/65

TITLE: The Content and Dynamics of the Soluble Carbohydrates in the Organs of the Vegetative Propagation of the Pinkred Succory (Acroptilon picris Cam) (Soderzhaniye i dinamika rastvorimykh uglevodov v organakh vegetativnogo razmnozheniya gorchaka rozovogo (Acroptilon picris CAM))

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 3, pp. 606-608 (USSR)

ABSTRACT: The pinkred succory is one of the worst species of the weed flora and occurs in several southern and southeastern districts of the USSR (Ref. 1,3). So far there are no effective control measures against it. The applied methods (ref. 2-7) do not always offer satisfying success. For the purpose of improving the control measures the data mentioned in the title ought to be known, which are lacking in publications. The authors carried out their investigations in the region of Kherson in the years 1955-1956 in the following variants: 1) The piece of land uncultivated in the experimental year; 2) Fallow ground with normal cultivation; 3) Fallow ground, on which prospering rosettes of succory were extirpated. The succory in the underground organs accumulates a considerable quantity of carbohydrates

Card 1/3

which convert into alcohol and hot water extract. Starch is lacking. The quantity and relation of these carbohydrates is not constant and depends on the season. (Table 1). The relative quantity of the soluble carbohydrates increases to a certain degree with deeper penetration of the roots. Table 2 brings data on the distribution in this respect. The results of analyses to a certain degree explain the causes for the succory's tenacity of life, its capability of developing overground organs even after a very deep cutting through of the roots and they give evidence of a very good storage of carbohydrates by the plants during winter. The measures of cultivating the piece of landovergrown with weeds have a great influence on the dynamics of the storage. Without cultivation (figure 1) 2 peaks are clearly distinguished, in which the soluble carbohydrates are stored in the roots: a) before the blossom, b) toward the begin of the hibernation. A systematical exstirpation of the prospering rosettes leads to a rapid decrease of the content of soluble carbohydrates in the roots, not though to their complete exhaustion. Therefore the systematical soil cultivation against the succory can never become

The Content and Dynamics of the Soluble Carbohydrates in the Organs of the Vegetative Propagation of the Pinkred Succory (Acroptilon picris Cam) 2o-119-3-6o/65

effective enough. At the same time it is recognized that even a very intensive soil cultivation lasting for 1 year does not lead to a complete exhaustion of the underground organs of the succory. There are 1 figure, 3 tables, and 7 references all of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V. I. Lenina (All-Union Scientific Research Institute for Corn of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin)

PRESENTED: December 2o, 1957 by A. L. Kursanov, Member, Academy of Sciences, USSR

SUBMITTED: March 1, 1957

AVAILABLE: Library of Congress

Card 3/3

KUDZIN, Yu.K., kand.sel'skokhozyaystvennykh nauk; YAROSHEVICH, I.V., VLASOVA, N.I.

Using bacterial fertilizers. Zemledelie 7 no.4:42-45 Ap '59.
(MIRA 12:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy.
(Soil inoculation)

KUDZIN, Yu.K. [Kudzin, IU.K.], kand. sel'skokhozyaystvennykh nauk;
YAROSHEVICH, I.V. [IAroshevych, I.V.], nauchnyy sotrudnik

Bacterial fertilizers. Nauk i zhyttia 9 no.3:40 Mr '59.
(MIRA 12:4)
(Soil inoculation)

KUDZIN, Yu.K.

Reaction of corn, sugar beets, and potatoes to changes in soil nutrients under prolonged usage of fertilizers. Pochvovedenie no.6:71-77 Je '60. (MIRA 13:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy, g.Dnepropetrovsk.
(Corn (Maize)--Fertilizers and manures)
(Sugar beets--Fertilizers and manures)
(Potatoes--Fertilizers and manures)

KUDZIN, Yu.K.; DAMASKINA, A.S.; CHERNYAVSKAYA, N.A.

Method of observing the growth of the corn plant (Zea mays L.)
Bot.zhur. 45 no.6:867-870 Je '60. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy, Dnepropetrovsk.
(Corn (Maize)) (Growth(Plants))

KUDZIN, Yu.K.; YAROSHEVICH, I.V.

Mobilization of organic phosphates in Chernozem soils and the phosphorus nutrition of plants. Trudy Inst. mikrobiol. no.11: 252-259 '61 (MIRA 16:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy.

*

KUDZIN, Yu.K., kand.sel'skokhoz.nauk; VLASOVA, N.I.

How to discover whether the seeds are disinfected or not?
Zashch. rast. ot vred. i bol. 6 no.3:42-43 Mr '61. (MIRA 15:6)

1. Vsesoyuznyy institut kukuruzy, g. Dnepropetrovsk.
(Seeds--Disinfection)

KUDZIN, Yu.K., kand.sel'skokhozyaystvennykh nauk; YAROSHEVICH, I.V.; VLASOVA, N.I.

Recent developments in the use of phosphorobacterin. Zemledelie 23 no.11:65-67 N '61. (MIRA 14:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy.
(Corn (Maize)--Fertilizers and manures)
(Bacteria, Phosphorus)

KUDZIN, Yu., kand.sel'skokhoz.nauk; YAROSHEVICH, I.,; VLASOVA, N.

Supply collective and state farms with cornseeds thoroughly prepared for planting. Muk.-elev. prom. 27 no.10:11 O '61. (MIRA 14:12)

1. Dnepropetrovskiy Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy.

(Corn(Maize))

KUDZIN, Yu.K., kand.sel'skokhoz.nauk

Using phosphorobacterin in sowing corn. Zemledelie 24 no.11:63-65 N '62. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy.
(Corn (Maize)) (Bacteria, Phosphorus) (Soil inoculation)

KUDZIN, Yu.K.; YAROSHEVICH, I.V.

Use of phosphotobacterin in the Chernozem zone. Mikrobiologiia 31 no.6:1098-1101 N-D '62. (MIRA 16:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy.
(UKRAINE—CHERNOZEM SOILS) (BACTERIA, PHOSPHORUS)

KUDZIN, Yu., kand. sel'skokhoz. nauk

Invisible friends of crops. Nauka i zhyttia 12 no.2:42 F '63.
(MIRA 16:4)

(Soil micro-organisms)

KUDZIN, Yu.K., doktor sel'skokhoz. nauk; DAMASKINA, A.S., kand. sel'skokhoz. nauk; CHERNYAVSKAYA, N.A., kand. sel'skokhoz. nauk

Conditions of the initial nutrition and the yield of corn. Agrobiologiia no.5:774-775 S-O'63. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy, Dnepropetrovsk.

KUDZIN, Yu.K., doktor sel'skokhoz. nauk; DOLODARENKO, A.I., agronom

Legumes as irrigated stubble crops. Zemledelie 26 no.6: 74-76 Je '64. (MIRA 17:8)

KUDZIS, A. P.: Master Tech Sci (diss) -- "On the problem of the distribution of forces in continuous prestressed reinforced-concrete beams". Kaunas, 1958. 22 pp (Min Higher Educ USSR, Kaunas Polytech Inst), 150 copies (KL, No 7, 1959, 124)

SOV/97-58-10-17/17

AUTHOR: Kudzis, A.P., (Engineer)

TITLE: Use of Fine-Aggregate Concretes for Prestressed Reinforced Concrete Constructions (O primenenii melkozernistykh betonov dlya predvaritel'no napryazhennykh konstruktsiy)

PERIODICAL: Beton i zhelezobeton, 1958, Nr 10, p 400 (USSR)

ABSTRACT: This is a criticism of an article under the same title which appeared in Beton i zhelezobeton, 1958, Nr 5, by Professor M.Z. Simonov, T.G. Matuzov (Candidate of Technical Sciences) and K.S. Karapetyan. The criticism stresses that, according to tests carried out in Kaunas Polytechnic Institute by Professor K.I.Vasiliauskas, fine-aggregate concrete of high strength and small shrinkage and mobility can be obtained during vibration using a relatively small load. The concrete consists of natural quartz and sand mixed according to the formula of B.G. Skramtayev, and reground portland cement of 480 kg/cm^2 activity. Other important data obtained

Card 1/2

Use of Fine-Aggregate Concretes for Prestressed Reinforced Concrete Constructions

during the preparation and testing of this concrete are given.
There are no figures, no references.

Card 2/2

KUDZIS, A.P., kand.tekhn.nauk; NOVIKOV, Yu.N., inzh.

Making prestressed reinforced concrete spun poles for 35 kv transmission lines. Bet. i zhel.-bet. no.11:497-500 N '60. (MIRA 13:11)
(Electric lines--Poles)

KUDZIS, A.P., kand.tekhn.nauk

Bearing capacity of prestressed ring-shaped elements under bending.
Bet. i zhel.-bet. 8 no.5:215-218 My '62. (MIRA 15:6)
(Prestressed concrete)

L 54873-65

ACCESSION NR: AP5018102 UR/0097/64/000/009/0431/0431

AUTHOR: Kudzis, A. P. (Candidate of technical sciences)

TITLE: Application of reinforced concrete poles in the construction of electrical transmission lines

SOURCE: Beton i zhelezobeton, no. 9, 1964, 431

TOPIC TAGS: reinforced concrete, electric power engineering, transmission line, electric engineering conference

ABSTRACT: The article summarizes papers read at the Inter-Republic Scientific-Technical Conference on the Problems of Planning, Production, Installation and Operation of Reinforced Concrete Poles for Electrical Transmission Lines with [illegible] kv. The conference was held at Vilnyus in June 1964 and was organized [illegible]ministry, Lithuanian SSR, the Main Directorate of Power and Electrification of the Council of Ministers, Lithuanian SSR, and the Republic Administration of Scientific Technical Societies of the Building and Power Industry. The conference was held in connection with new problems created by the rapid development of the rural electrification of the USSR and also for an

Card 1/2

L 54873-65

ACCESSION NR: AP5018102

exchange of experience dealing with the planning, investigations and construction of poles made of centrifuged and vibrated reinforced concrete. The effectiveness of using prestressed reinforced concrete elements for construction of poles and substations of electrical transmission lines was [illegible] adopted resolution and also the feasibility of applying mass [illegible] methods for the production of reinforced concrete poles and [illegible] assembly-line method for constructing transmission lines.

[illegible]: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, EE

NR REF SOV: 000 OTHER: 000 JPRS

Card 2/2

KUCHEROV, R.Ya.; KUDZIYEV, A.G.

Studying the diffusion separator column. Soob. AN Gruz. SSR 24 no. 1:23-29 Ja '60. (MIRA 14:5)

1. Akademiya nauk Gruzinskoy SSR, Fiziko-tekhnicheskiy institut. Predstavleno akademikom E.I. Andronikashvili.
(Separators)

Gleif, Antanas, doc.

The tensile strength of centrifuged concrete. Stav stat 32 no.8: 493-499 '64.

1. Kaunas Polytechnical Institute, Branch Vilnyus, U.S.S.R.

HUNGARY / Chemical Technology. Chemical Products and Their Application--Ceramics. Glass. Binding Materials. Concrete H-13

Abs Jour: Ref Zhur-Khimiya, No 3, 1959, 9032

Author : Kuehne, K.

Inst : Not given

Title : Establishing Mechanisms of Glass Properties Depending on Composition

Orig Pub: Epitoanyag, 1958, 10, No 4-5, 113-117

Abstract: A systematic study of glass systems, physical and chemical glass properties in relation to the individual components of the glass, revealed mechanisms significant for the theory as well as the practice of glass manufacture. The radius

Card 1/2

Abs Jour: Ref Zhur-Khimiya, No 3, 1959, 9032

and ion charge, field intensity, and coordinate number in relation to the nuclear charge were studied, which permitted the establishment of a close relationship to element periodicity. Experimental changes may appear in the molecular structure of glass, if the grating-forming and grating-modifying glass oxides exceed or do not attain a definite molecular ratio. --Author's abstract

KUENSTLER, Lucylla

Protection against x-rays in dentistry. Czas. stomat. 18 no.5: 595-604 My'65.

1. Z Zakladu Ortodoncji Slaskiej Akademii Medycznej w Zabrzu (Kierownik: doc. dr. F. Labiszewska-Jaruzelska).

Czechoslovakia /Chemical Technology. Chemical Products and Their Application I-27

Wood chemistry products. Cellulose and its manufacture. Paper.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32696

Author : Kuerschner K., Schweizpacherova T.

Title : Determination of the Lignin Content (On the Basis of Methoxyl groups) in Wood

Orig Pub: Prehl. lesnick., drevask. celuloz. a papier. liter., 1955, 6, No 3, 97-102

Abstract: The method is based on hydrolysis of the material with 82% H_2SO_4, and splitting off of the CH_3O- group as CH_3OH, followed by oxidation of CH_3OH separated from the other components (aldehydes,

Card 1/2

Czechoslovakia /Chemical Technology. Chemical Products I-27
and Their Application

Wood chemistry products. Cellulose and its manufacture. Paper.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32696

acids) to CO_2 and H_2O (with 1% alkaline solution of $KMnO_4$), and decomposition of excess $KMnO_4$ with oxalic acid the excess of which is titrated with a 0.1 N solution of $KMnO_4$.

Card 2/2

KUERYAVTSEV, G.V.; NOVITSKIY, V.Ye.; YAFAYEV, R.Kh.

Carbon agglomeration reaction (carbo-test) in the diagnosis of infectious nonspecific polyarthritis. Vop. revm. 3 no.3: 63-67 Jl-S'63 (MIRA 17:3)

1. Iz kliniki fakul'tetskoy terapii (nachal'nik - prof. V.A. Beyyer) i kafedry epidemiologii (nachal'nik - prof. I.I. Rogozin) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.

L 15805-65 RAEM(c)/ESD(t)/ASD(a)-5
ACCESSION NR: AP4048309 S/0292/64/000/011/0008/0011

AUTHORS: Lodochnikov, E. A. (Engineer); Luk'yanchuk, V. P. (Candidate of technical sciences); Kufa, V. A. (Engineer)

TITLE: Factors determining the specific power of capacitive generators

SOURCE: Elektrotekhnika, no. 11, 1964, 8-11

TOPIC TAGS: capacitive generator, power equipment, field intensity, permeability

ABSTRACT: The factors determining the energy characteristics of disk capacitive generators of both the unipolar and bipolar types were investigated. Starting with the general expression for the power maximum of a capacitive generator, the expressions for both types of generator were determined. For the bipolar generator

$$P_{max} = \frac{\dot{}}{15} E^2 \varepsilon m (D_1 - D_2) n \varphi_b (p\delta, D_1 + D_2),$$

and for the unipolar generator ϕ_u replaced ϕ_b. In this equation E is the excitation voltage, ε is the dielectric permeability, m is the number of disks, D_1 and D_2 are the external and internal diameters of the disks, n is the number of revolutions. The complex functions ϕ_b and ϕ_u, of D_1 and D_2 and $p\delta$ (p is the number of pole pairs and δ is the gap between the disks of the rotor and the stator) differ greatly for

Card 1/4

each type. The effects of the individual variables were considered. For air at atmospheric pressure $E \sim 3$ kv/mm is the maximum, but compressed gases (H_2 at 37 atm yields $E = 62$ kv/mm) or a vacuum permit a higher E. In vacuums of 10^{-5} mm of Hg an E exceeding 100 kv/mm is theoretically possible, but electrode properties decrease the obtainable value to 25-30 kv/mm. For generators operating at $E = 50$ kv/mm, a capacitive generator has a specific weight $4\frac{1}{2}$ times less than an inductive generator of the same power. For equal weights, the capacitive generator requires an E of only 24 kv/mm for equal power. At atmospheric pressure the capacitive generator is 60 times heavier. The effect of ε variation is small because only gases were considered and their ε are approximately equal. The dependence of ϕ_b and ϕ_u on the number of pole pairs and gap width is seen in Fig. 1 on the Enclosure. Since [illegible] are no limits, the output of a capacitive generator, operating at its maximum, is fixed in the design. All theoretical possibilities for $p\dot{z}$ are not obtainable in practice, as construction is limited by providing stability and form for the [illegible], the precision of the gaps, and the stability of the insulation. The precision of the gaps is controlled by the hardness of the disks and the minimization of their play. From a construction point of view, the unipolar generator is simpler, but the bipolar type has superior electrical characteristics. For outputs 25-40 kv, the specific power of capacitive generators is considerably larger than for other types. Orig. art. has: 1 table, 5 figures, and 12 equations.

L 15305-65
ACCESSION NR: AP4048309

ASSOCIATION: none

SUBMITTED: 00 ENCL: 01

SUB CODE: EE NO REF SOV: 002 OTHER: 003

Card 3/4

L 15805-65
ACCESSION NR: AP4018309

ENCLOSURE: 01

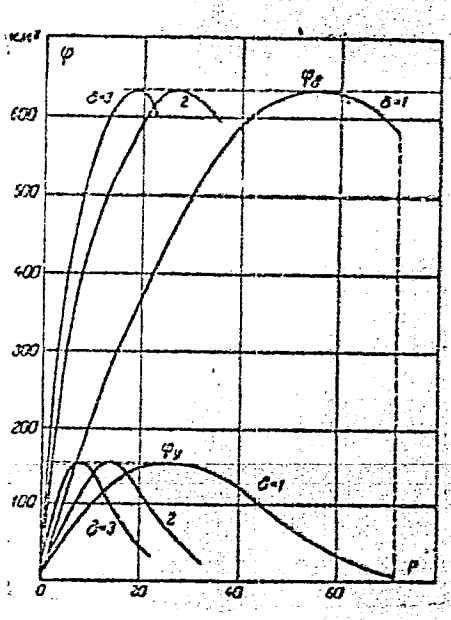


Fig. 1. Dependence of the functions ϕ_b and ϕ_u on the number of pole pairs. D_1 = 250 mm; D_2 = 90 mm; a = d = 2δ (a is the distance between stator plates, and d is the plate thickness).

Card 4/4

KUFAKOVA, N.A.

[The legal regulation of financial budgets of Soviet institutions; abstract of a dissertation submitted for the degree of Candidate in the Juridical sciences] Pravovoe regulirovanie finansirovaniia biudzhetnykh uchrezhdenii v SSSR; avtoreferat dissertatsii na soiskanie uchenoi stepeni kandidata iuridicheskikh nauk. Moskva, Moskovskii gos. univ. im. M.V.Lomonosova, 1955. 13 p. (MLRA 9:10)
(Finance)

KUFAL', G.E.

Two variable stars. Per. zvezdy 14 no.6:506-510 D '63.
(MIRA 18:5)

1. Gosudarstvennyy astronomicheskiy institut imeni Shternberga, Moskva.

KUFAREV, B.P.; SOBOLEVA, S.V.

Continuum as a complete limit set of a converging sequence of analytic functions. Dokl. AN SSSR 153 no.5:999-1000 D '63. (MIRA 17:1)

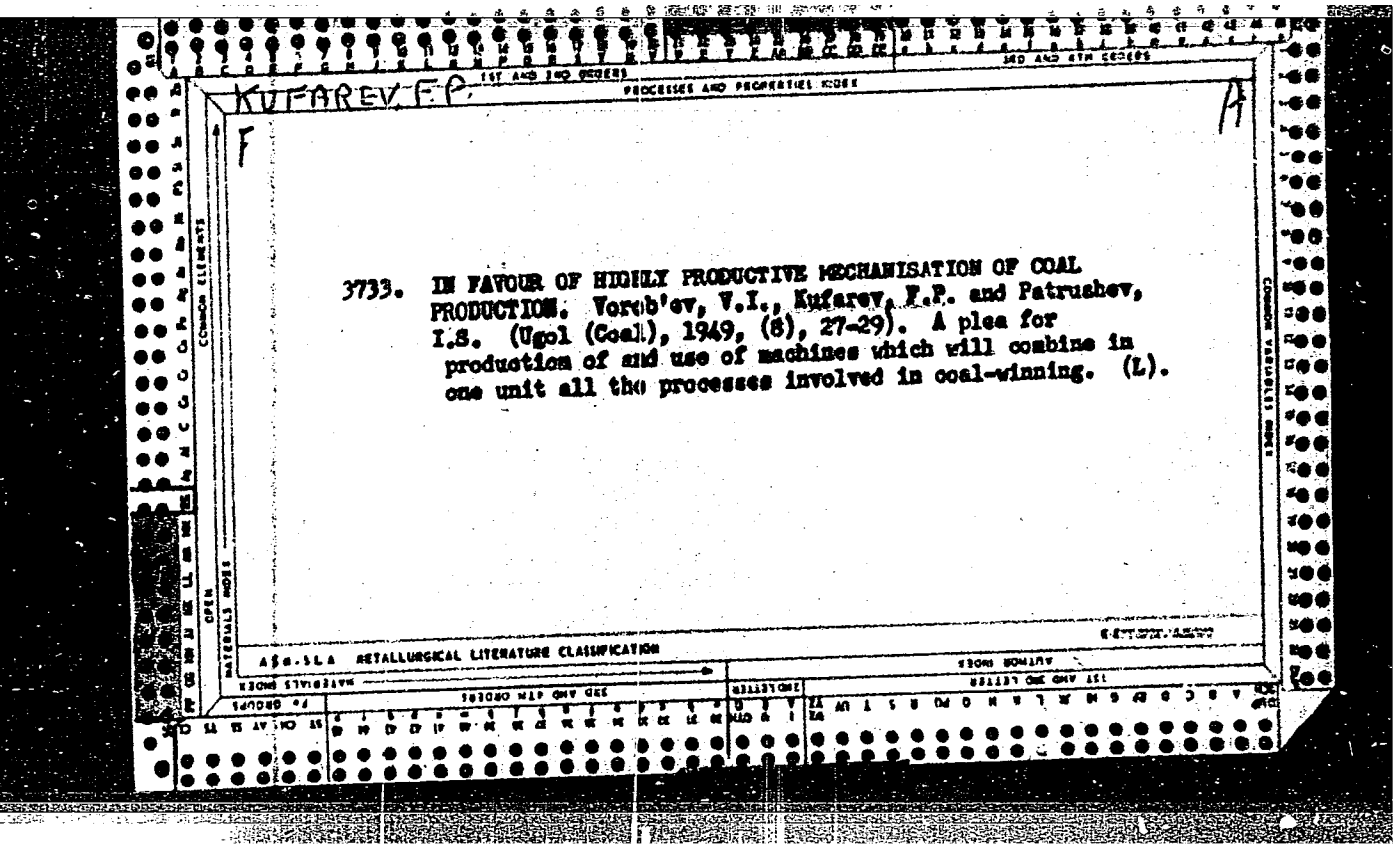
1. Tomskiy gosudarstvennyy universitet im. V.V. Kuybysheva. Predstavleno akademikom M.A. Lavrent'yevym.

KUFAREV, B.P.; NIKULINA, N.G.

Lebesgue measure of subsets of a Euclidean space as the leading variation of the function - distance to the closed set. Dokl. AN SSSR 160 no.5:1004-1006 F '65.

(MIRA 18:2)

1. Tomskiy gosudarstvennyy universitet im. V.V. Kuybysheva. Submitted August 24, 1964.



KUFAREV, F.P.

3733. IN FAVOUR OF HIGHLY PRODUCTIVE MECHANISATION OF COAL PRODUCTION. Vorob'ev, V.I., Kufarev, F.P. and Patrushev, I.S. (Ugol (Coal), 1949, (8), 27-29). A plea for production of and use of machines which will combine in one unit all the processes involved in coal-winning. (L).

KUFAREV, F. P.; PATRUŠHEV, I. S.; VOROB'YEV, V. I.; GORBACHEV, T. F.

"Effectiveness of Tests with Soviet Kuzbass Combine," Mekhanizatsiya Trudoyemkikh i Tyazhelykh Rabot, No 4, 1950.

Translation, W-13871, 25 Sep 50

KUFAREV, G. L.

"Experimental Study of Plastic Deformations in Metal Cutting" p. 115-126, in the book Research in the Physics of Solids, Moscow, Izd-vo AN SSSR, 1957. 277 p. Ed. Bol'shanina, M. A., Tomsk Universitet, Siberskiy fiziko-tekhnicheskiy institut.

PErsonalities: Kuznetsov, V. D.; Smirnov-Alyayev, G. A.; and Rozenberg, V. M.; There are 12 figures, 2 tables, and 11 references, 8 of which are Soviet.

This collection of articles is meant for metallurgical physicistsand for engineers of the metal-working industry. This book contains results of research in the field of failure and plastic deformation of materials, mainly of metals. Problems of cutting, abrasion, friction, and wear of solid materials (metals) are discussed.

S/123/59/000/008/020/043
A004/A002

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 8, p. 74, # 29121

AUTHOR: Kufarev, G. L.

TITLE: Experimental Investigations of Plastic Deformation During Metal Cutting

PERIODICAL: V sb.: Issled. po fiz. tverdogo tela. Moscow. AN SSSR, 1957, pp. 115-126

TEXT: The author analyses diagrams of the process of uninterrupted chip formation from the viewpoint of their validity. Two diagrams were experimentally checked: diagram II, determining that deformations are taking place in the only shear plane which is located at a certain angle in direction of the tool motion, and diagram VI, by which it is assumed that plastic shears are taking place simultaneously in fan-shaped planes, which pass through the tool blade. Tests were carried out during unrestricted planing of copper at low speeds (V = 19 mm/min) with tools having rake angles $\gamma = 17^{\circ}$, 27° and 37°. The specimen was made of two plates fitting each other. The degree of deformation

Card 1/2

S/123/59/000/008/020/043
A004/A002

Experimental Investigations of Plastic Deformation During Metal Cutting

was determined in any point of the plastically deformed zone by the distortion of a circle of small diameter which was drawn on the surface of the specimen under investigation. During the deformation process these circles changed into ellipses. By measuring the ellipses it was possible to establish magnitude and sign of three main deformations, the direction of their axes and kind of deformed state (tension, compression, shear). The author presents test results of turning copper at a speed of 25-250 m/min. The specimen was a disk made of two parts fitting each other. Graduation lines in the form of an Archimedean spiral were drawn on each of the disks. The deformation was determined by the distortion of the graduation lines. An analysis of the deformation taking place during turning is given. It is shown that the deformation is taking place in a rather narrow zone, which is near the shear plane, which makes it possible to accept diagram II for the calculation of deformations during metal cutting at high speeds. There are 12 figures and 11 references.

B. I. L.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

KUFAREV, G. L.

Flexible tensometers for measuring cutting forces. Izv.TPI 85:213-219 '57. (MIRA 10:12)

1.Predstavleno prof. doktorom tekhn.nauk A. M. Rozenbergom.
(Metal cutting) (Strain gauges)

SOV/123-59-15-60126

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 15, p 175 (USSR)

AUTHOR: Kufarev, G.L.

TITLE: The Effects of Growth of the Measuring Stress on the Characteristics of the Elastic Dynamometer

PERIODICAL: Izv. Tomskogo politekhn. in-ta, 1957, Vol 85, pp 220 - 223

ABSTRACT: The effects of the growth of the measuring stress of the recorder and the transmission gear of a measuring device on the characteristics of a spring dynamometer are examined. It is stated that the increasing mechanical lever transmission, existing in the mechanism of a measuring device, does not always lead to an increase in sensitiveness of the dynamometer. The derivation and analysis of the formula for the selection of the most favorable gear ratio of the mechanical lever device, in dependence on the growth of the measuring stress of the recorder at varying loads, are given.

Ya.I.I.

Card 1/1

KUFAREV, G.L., Cand Tech Sci -- (diss) "Deformation of metal in the area of cutting in the formation of flow-off chips." Tomsk, 1958, 17 pp with graphs (Min of Higher Education USSR. Tomsk Order of Labor Red Banner Polytechnic Inst im S.M. Kirov. Chair of "Machine Tools and Cutting of Metals") 100 copies Bibliography: p 17 (17 titles) (KL, 27-58, 110)

KUFAREV, G.L., prepodavatel'

Experimental determination of the speed of deformation in plastic metals subjected to ultraslow cutting. Nauch.dokl.vys. shkoly; mash.i prib. no.1:141-146 '58. (MIRA 12:1)

1. Predstavleno kafedroy "Stanki i rezaniye metallov" Tomskogo politekhnicheskogo instituta.
(Metal cutting)

SOV/122-58-6-18/37

AUTHORS: Rozenberg, A.M., Doctor of Technical Sciences, Professor, and Kufarev, G.L., Engineer

TITLE: The Determination of the Degree of Plastic Deformation of Metal During Cutting (Opredeleniye stepeni plasticheskoy deformatsii metalla pri rezanii)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 6, pp 49-52 (USSR)

ABSTRACT: The nature of the plastic deformation has been experimentally shown as simple shearing (slip) combined with compression. A circle in the undisturbed metal becomes an ellipse in the fully-developed chip. Reference is made to the conception of a relative shear as the criterion of the degree of plastic deformation in metal cutting. Russian references and Ref 4 (E. Merchant - Journal of Applied Physics, 1945, Nrs 5 and 6) contain a formula (Eq.(1)) expressing the relative shear in terms of the front clearance angle and the angle between the direction of cutting and the boundary of the deformed metal. Another formula, (Eq.(2)) proceeds from the pattern of a gradually developing deformation and substitutes the boundary of the last and major deformation for the single boundary line postulated in Eq.(1). The present paper, based on experimental work with copper cut at very low

Card 1/2

The Determination of the Degree of Plastic Deformation of Metal During Cutting

speed, introduces another formula (Eq.(3)), which expresses the relative shear by an angle appearing in the texture pattern of the chip and by the contraction ratio of the chip. Measured values of the relative shear are compared with the three formulae, showing excellent agreement with the third.
There are 5 figures, 1 table and 7 references, 5 of which are Soviet and 2 English.

Card 2/2 1. Metals--Machining 2. Metals--Deformation 3. Mathematics --Applications 4. Plasticity--Mathematical analysis

S/124/60/000/009/003/005
A005/A001

Translation from: Referativnyy zhurnal, Mekhanika, 1960, No. 9, p. 135, # 12153

AUTHOR: Kufarev, G.L.

TITLE: The Deformation Rate in the Process of Cutting a Ductile Metal

PERIODICAL: Izv. Tomskogo politekhn. in-ta, 1959, Vol. 96, No. 1, pp. 11-17

TEXT: Experimental methods are explained of approximate determination of the deformation rate in the machining of metals by cutting chips. The magnitude $v = d\gamma/dt$ it considered as criterion of deformation rate, where γ is the actual relative shear deformation. The methods are of considerable interest, which the author used for plotting imprints of very small diameter on the metal under treatment, as well as the determination of the intensity of the main logarithmic deformations from the distortion of the shape of these imprints. The author's conclusions are of considerable interest that the spread (the linear sizes) of the deformation focus decreases with increasing cutting speed, as well as the proof that the deformation rate increases hereat in higher degree than the cutting speed.

G.A. Smirnov-Alyayev

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

S/115/60/000/008/004/013
B019/B063

AUTHORS: Rozenberg, A. M., Kufarev, G. L., Rozenberg, Yu. A.

TITLE: A Dynamometer for Measuring Torques in Milling

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 8, pp. 13-15

TEXT: The dynamometer described in the present paper was designed at the Tomskiy politekhnicheskiy institut (Tomsk Polytechnic Institute). Its rigid construction excludes any vibrations, it has a quick response, records any change in the cutting power, and is sufficiently sensitive. It consists essentially of two disks which are connected by ribs. The rigidity of this dynamometer depends on the number and thickness of these ribs. The ribs are deformed during the power transmission between the two disks, one of which is fastened to a spindle, while the other has a cone for fastening the miller. The deformation and the torque transmitted are measured by two inductive transmitters housed within the dynamometer. Each transmitter has a coil with a core of Armco iron. They are built in in such a way that the air gap of one transmitter is narrowed down when the air gap between the core and the armature of the other transmitter

A Dynamometer for Measuring Torques in Milling S/115/60/000/008/004/013
B019/B063

extends. The two transmitters are connected with two equal circuits. Before the operation begins, the currents of the two circuits are equally adjusted by means of two potentiometers. Due to changes of the air gaps, different amperages currents occur in the two circuits during the operation. The difference is recorded by a measuring instrument. This dynamometer has stood the test: It is very reliable in operation, recording is stable, and there are no vibrations. The recorded amperage is linearly dependent on the torque. There are 2 figures.

Card 2/2

L 43540-65 EWP(k)/EWT(l)/EWT(m)/EWP(b)/EWP(t) Pf-4 JD

ACCESSION NR: AR5009341 S/0276/65/000/002/B096/B096

20

B

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya. Sv. t., Abs. 2B620

AUTHOR: Rozenberg, A. M.; Rozenberg, Yu. A.; Kufarev, G. L.

TITLE: New functions from calculations of cutting forces in milling

16

CITED SOURCE: Tr. Kuybyshevsk. aviats. in-t, vyp. 18, 1963, 78-92

TOPIC TAGS: milling, face cutter, cylindrical cutter, cutting force calculation, force component, peripheral force, torque, cutting power, feed pressure

TRANSLATION: The authors illustrate the derivation of equations expressing the processing components of cutting forces (i.e. peripheral force, torque, mean feed pressure) in the operation of a face cutter and (torque, peripheral force, cutting power) a cylindrical cutter. These equations are presented in the form of polynomials in which effects of various cutting process parameters are considered individually in relation to forces arising on the tool's leading and trailing surfaces. It was established that the effect of speed on cutting force in face milling is extensive and insignificant at fast and slow feeds, respectively. An increase in the diameter of a symmetrically positioned cutter, other conditions re-

Card 1/2

L 43540-65

ACCESSION NR: AR5009341

maining constant, produces a significant reduction in peripheral force and a lesser drop in torque. Cutting power declines sharply when the diameter is increased at a constant cutting speed and it drops slowly when this increase takes place at constant rpm. Feed pressure declines as well when the diameter of a cutter is increased. The drop in peripheral force lags behind the increase in diameter of a cylindrical cutter, while torque increases slowly. Feed pressure drops in the operation of a face cutter when the angle in plane φ is decreased. The change in feed pressure becomes significant when feed is intensified. Results of experimental verifications confirmed the correctness of the theoretical conclusions. Bibl. with 12 titles; 10 illustrations and 2 tables. L. Romancheva.

SUB CODE: IE ENCL: 00

Card 2/2 mb

ALEKSANDROV, A.N., kapitar 1-go ranga; VANOV, Yu.M., kapitan 1-go ranga; KUFAREV, C.L., kapitan 1-go ranga

A fundamental work. Mor. sbor. 47 no.4:91-93 Ap '64.
(MIRA 18:7)

KUFAREV, G.L.; DEL', G.D.; GOL'DSHMIDT, M.G.

Method for studying plastic deformation by hardness measurement.
Zav. lab. 31 no.8:1011-1013 '65. (MIRA 18:9)

1. Tomskiy politekhnicheskiy institut.

KUFAREV, G.L., kand.tekhn.nauk, dotsent; KOZLOV, A.A., inzh.

Machinability of nonferrous metals subjected to face milling.
Vest.mashinostr. 45 no.3:68-72 Mr '65.
(MIRA 18:4)

ACC NR: AP6019933 SOURCE CODE: UR/0122/66/000/006/0073/0074

AUTHOR: Kufarev, G. L. (Candidate of technical sciences); Livshits, Y. I. (Engineer)

ORG: None

TITLE: Workability of deformable high-manganese steel

SOURCE: Vestnik mashinostroyeniya, no. 6, 1966, 73-74

TOPIC TAGS: manganese steel, tool steel, cutting steel, honing, metal machining, microscope, vibration, cast alloy

ABSTRACT: Data are given from a study on the machining properties of various grades of tool steel used for planing 54G17Yu3Kh and 45P17Yu3 steel. These grades of steel were machined on the 7M37 planer. Cutting edges were mechanically attached to the cutters being tested. These cutters were ground on the K346SM2K abrasive disc and honed on a cast iron disc. The "Mir" microscope was used for measuring cutter wear. The following grades of tool steel were tested as cutters: R18, R9K5, R9K10, R18F2, R14F4; hard alloys type TK (T5K10, T15K6, T14K8) and VK (VK4, VK6m, VK8); and other hard alloys. The cutters tested had various shapes and cutting angles. The tests show that cutter shapes with negative angles are not stable. Negative angles cause cutting stresses and vibration. The most stable cutters were those made of A type cast alloy with the following chemical composition: 45-50% Co, 27-32% Cr, 14-19% W, 2-4% C, 2-7%

Card 1/2 UDC: 621.9.011:669.15'74-194

L [illegible]

ACC NR: AP6019933

2

Ta+Nb, 1-3% Mn and 2-5% Fe. Cutter stability as a function of cutting speed is given in the form of a diagram for all tool materials used. Orig. art. has: 1 figure, 2 tables.

SUB CODE: 13, 11/ SUBM DATE: none/ ORIG REF: 002

Card 2/2 MLP

KUFAREV, O.

Nikolai Ivanovich Leporskii, 1877-1952. Zh. vysshei nerv. deiat. 2 no. 6:923-926 Nov-Dec 1952. (CLML 24:1)

1. Obituary of former Member of the All-Union Therapeutic Society imeni S. P. Botkin, Member of the Administration of its Leningrad Branch, and Chairman of the Gastrology Section.

KUFAREV, P. P.

Ueber das zweifachzusammenhängende minimalgebiet. Tomsk, Izv. NII matem. i mekh. un-ta, 1 (1935), 228-236.

Ob odnoparametricheskikh semeystvakh analiticheskikh funktsiy. Matem. SB., 13 (55), (1943), 87-118.

K voprosu o povedenii otobrazhayushchey funktsii na granitse. Tomsk, Izv. NII matem. i mekh. un-ta, 3:1 (1946), 37-60.

Ob odnom svoystve yadrovoy funktsii oblasti, tomsk, IZV. NII matem. 1 mekh. un-ta, 3:1 (1946), 72-74.

Ob integralakh prosteyshego differentsial'nogo uravneniya s podvizhnoy polyarnoy osobennost'yu pravoy chasti. Tomsk, Izv. NII matem. 1 mekh. un-ta 3:1 (1946), 72-74.

Ob integralakh prosteyshego differentsial'nogo uravneniya s podvizhnoy polyarnoy osobennost'yu pravoy chasti. Tomsk, Uchen. Zap. un-ta, 1 (1946), 35-48.

Teorema o resheniyakh odnogo differentsial'nogo uravneniya. Tomsk, Uchen. Zap. un-ta, 5 (1947).

Ob odnom metode chislennogo opredeleniya parametrov v integrale shvartsa-kristoffelya. DAN, 57 (1947), 535-537.

KUFAREV, P. P. Con't.

SO: Mathematics in the USSR, 1917-1947
Edited by K[illegible]rosh, A. G.
Markusevich, A. I.
Rashevskiy, P. K.
Moscow-Leningrad, 1948

KUFAREV, P.P.

Kufareff, P. P. Zur Frage nach dem Verhalten der abbildenden Funktion am Rande. Bull. [Izvestiya] Math.-Mech. Inst. Univ. Tomsk 3, 57–60 (1946). (Russian. German summary)

The author states as his chief result the following. Let G be a simply connected bounded region of the z-plane, whose boundary Γ satisfies the following conditions: (a) Γ is a closed Jordan curve; (b) Γ lies in the ring $1-\epsilon/2 \leqq |z| \leqq 1+\epsilon/2$; (c) on the arc Γ_{φ_0} of the boundary Γ which lies in the angle $-\varphi_0 \leqq \varphi \leqq \varphi_0$ the radius vector to the point is a single-valued function of the argument, $r = f(\varphi)$, satisfying the condition $|f(\varphi)-1| \leqq Q|\varphi|^\alpha$. There are assumed to be certain restrictions on the constants ϵ, φ_0, Q. Then a function $w = \Phi(z)$, $\Phi(0)=0$, mapping the region G on the unit circle $|z|<1$ and its derivatives $\Phi'(z), \cdots, \Phi^{(\alpha-1)}(z)$ approach definite limiting values $\Phi(1), \Phi'(1), \cdots, \Phi^{(\alpha-1)}(1)$ as z approaches 1 from within G along paths not tangent to Γ. Inequalities on the constants $\Phi(1), \Phi'(1), \cdots, \Phi^{(\alpha-1)}(1)$ are also given. Since some of the proofs and preliminary theorems are incorrect, the validity of the results is open to question.

W. Seidel (Rochester, N. Y.)

Source: Mathematical Reviews, Vol No.

Kufarev, P. P.

Kufarev, P. P. On some properties of the kernel function of a domain. Bull. [Izvestiya] Math. Mech. Inst. Univ. Tomsk 3, 72–74 (1946). (Russian)

Let G be a plane domain of finite connectivity, P a boundary point of G and ρ the radius of curvature of the boundary curve at P. The author considers the quantity $H_G(Z) = K_G(Z, Z) - \pi^{-1}(Z+\bar{Z})^{-2} - 2|Z|^2\pi^{-1}\rho^{-1}(Z+\bar{Z})^{-3}$, where $K_G(Z, T)$ is the kernel function of G. Using the method of the minimum integral [see Bergman, J. Reine Angew. Math. 169, 1–42 (1932)] the author proves that, if Z approaches P along a ray lying inside G, then $\lim_{Z\to P} H_G(Z)$ exists. In the opinion of the reviewer the result can be easily generalized to the case of functions of several complex variables. Since the kernel function is closely related with the Green's function of the domain, the same method of the minimum integral may be applied to the investigation of Robin's constant and the Green's function. It can be extended also to the theory of linear partial differential equations of elliptic type.

S. Bergman (Cambridge, Mass.)

KUFAREV, P. P.

USSR/Petroleum Industry
Oil Wells
Filtration

Aug 1947

"Some Frequent Solutions of Problems of Filtration," Yu. P. Virogradov, P. P. Kufarev, Physical Engin Inst, Tomsk State U imeni V. V. Kuybyshev, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 4

Discusses specific cases of formulas for claculating filtration in oil bores applied to filtration problems of wells. Submitted by Academician S. L. Sobolev, 23 Feb 1947.

PA 53T88

Kufarev, P.P.

Kufarev, P. P. On a method of numerical determination of the parameters in the Schwarz-Christoffel integral. Doklady Akad. Nauk SSSR (N.S.) 57, 535-537 (1947). (Russian)

The integral referred to in the title is that concerned with the conformal representation of the interior of a circle on a simple connected domain bounded by a polygon. The method is developed in the present paper for the special case in which the polygonal domain consists of the whole plane cut by a broken line having a finite number of sides one of which extends to infinity. Denoting the vertices of this polygon in order by $\infty, A_1, A_2, A_3, \cdots$, the whole

Source: Mathematical Reviews, Vol. 9 No. 6

z-plane cut by the polygon ... can be represented on $|w|<1$ by a function ... expressible as a Riemann-Christoffel integral ... an elementary function, the problem will be solved if $f_{n-1}(w)$ can be derived from $f_n(w)$. Let A be an arbitrary point on the segment A_nA_{n+1}; then the plane cut to $\infty, A_1, A_2, A_3, \ldots, A_n, A$ will be represented on $|w|<1$ by a function of the form

$$z=f(w,\gamma)=e^{-\gamma}\int_0^w \frac{1-w/\mu(t)}{(1-w/a(t))^{\gamma}}\prod_{\mu=1}^{n}\left(\frac{1-w/a_\mu(t)}{1-w/b_\mu(t)}\right)^{\alpha_\mu}dw,$$

where $\mu(t)$ and $a(t)$ are the points on $|w|=1$ which correspond to $z=A$ and $z=\infty$, and $a_\mu(t)$, $b_\mu(t)$ are the two points on $|w|=1$ which correspond to the vertex A_μ. We shall have $f_n(0,t)=e^{-\gamma}$, so that, as A varies from A_1 to A_{n+1}, γ will increase from say t_1 to t_{n+1} and $f(w,t)$ will change continuously from $f_1(w)$ to $f_{n+1}(w)$. Then $f(w,t)$ will satisfy the equation of Löwner [Math. Ann. 89 103–121 (1923)]:

$$\frac{\partial f}{\partial t}+w\frac{\mu(t)+w}{\mu(t)-w}\frac{\partial f}{\partial w}=0.$$

Setting

$$\mu(t)=e^{i\lambda(t)},\quad a(t)=e^{i\alpha(t)},\quad a_\mu(t)=e^{i\alpha_\mu},\quad b_\mu(t)=e^{i\beta_\mu(t)},$$

there results the system of equations

$$d\alpha_\mu/dt=\cot\tfrac{1}{2}(\alpha_\mu-\lambda),\quad d\beta_\mu/dt=\cot\tfrac{1}{2}(\beta_\mu-\lambda),$$

$$\frac{d\lambda}{dt}=3\sum_{\mu=1}^{n}\alpha_\mu\left(\frac{d\alpha_\mu}{dt}-\frac{d\beta_\mu}{dt}\right).$$

This system possesses a unique solution such that for $t=t_\mu$ the parameters $\mu(t)$, $a(t)$, $a_\mu(t)$, $b_\mu(t)$ take the values (assumed known) corresponding to the polygon with $A=A_\mu$. There only remains the determination of the value of t_{n+1}. An equation for this is obtained by considering that if s represents the length A_1A_{n+1} then $\int_0^{t_{n+1}}ds$ is equal to the length A_1A_{n+1}, where

$$\frac{ds}{dt}=\tfrac{1}{2}e^{-\gamma}\left|\sin^{-1}(\lambda-\alpha_\mu)\prod_{\mu=1}^{n}\left(\frac{\sin(\lambda-\alpha_\mu)}{\sin(\lambda-\beta_\mu)}\right)^{\alpha_\mu}\right|.$$

A. J. Macintyre (Aberdeen).

Source: Mathematical Reviews, Vol. 9 No. 6